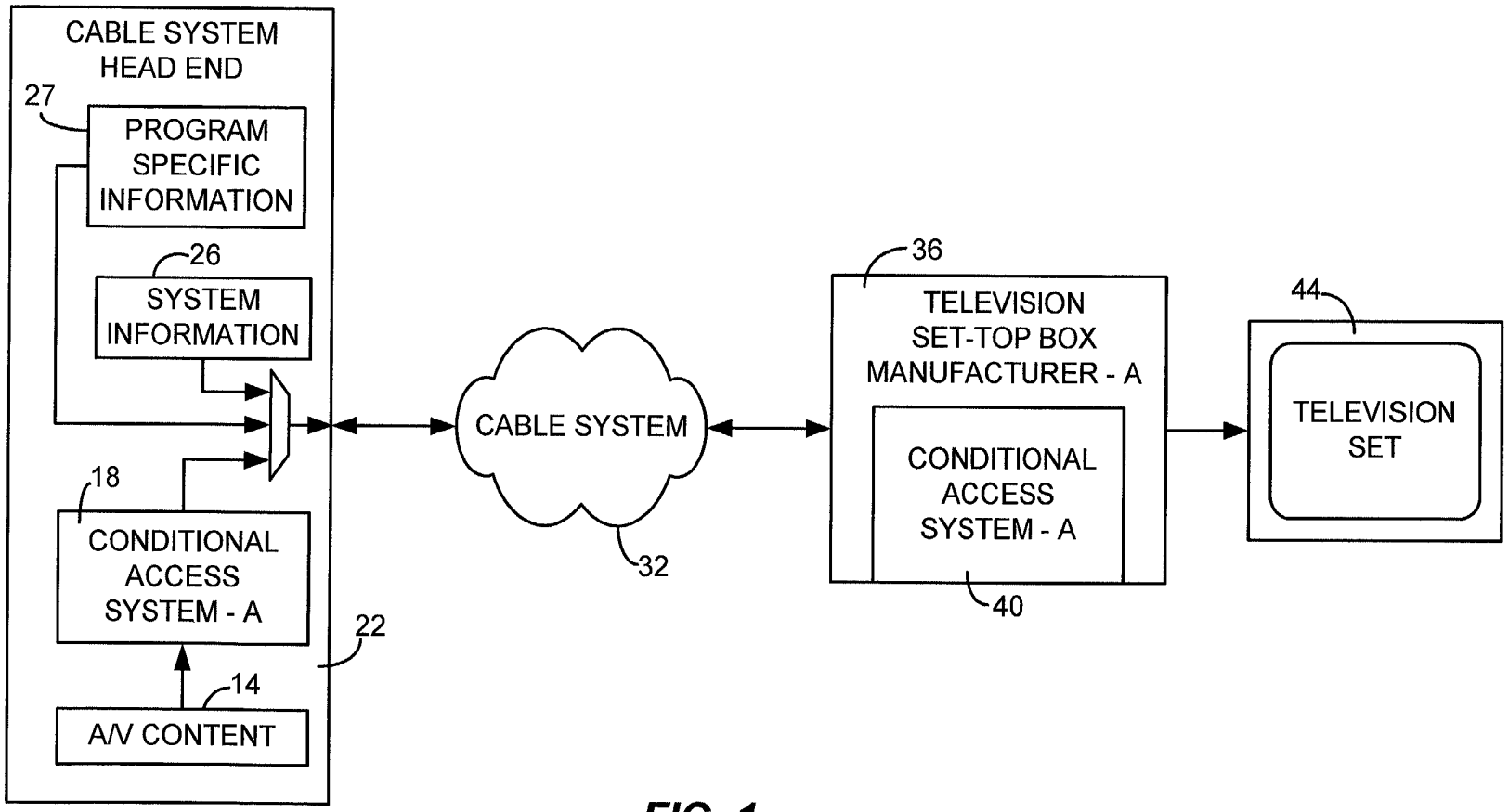


FIG. 1

(PRIOR ART)

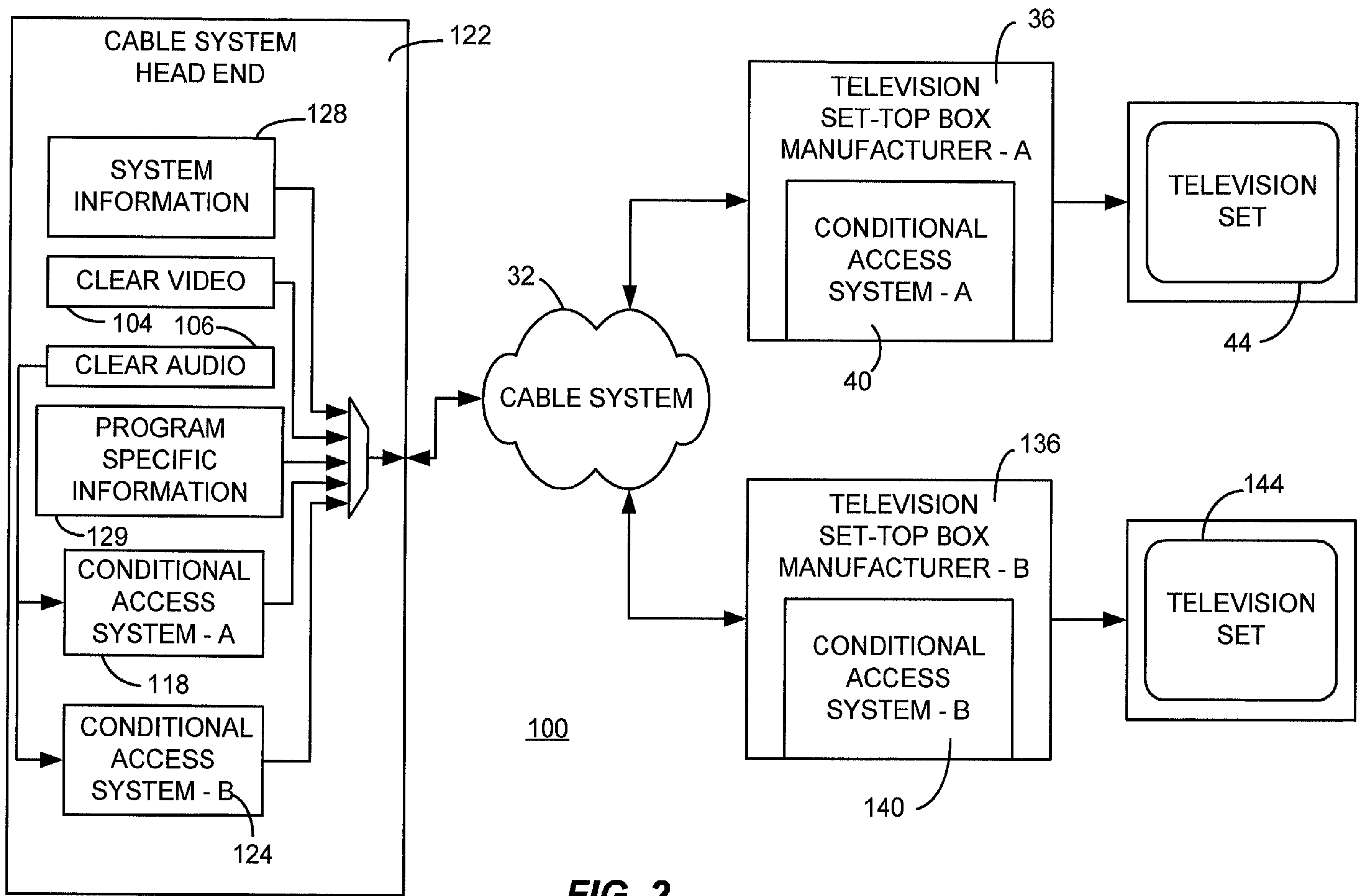

CABLE SYSTEM
HEAD END
122
128
SYSTEM
INFORMATION
CLEAR VIDEO
104
106
CLEAR AUDIO
PROGRAM
SPECIFIC
INFORMATION
129
CONDITIONAL
ACCESS
SYSTEM - A
118
CONDITIONAL
ACCESS
SYSTEM - B
124
32
CABLE SYSTEM
100
36
TELEVISION
SET-TOP BOX
MANUFACTURER - A
CONDITIONAL
ACCESS
SYSTEM - A
40
TELEVISION
SET
44
136
TELEVISION
SET-TOP BOX
MANUFACTURER - B
CONDITIONAL
ACCESS
SYSTEM - B
140
144
TELEVISION
SET

FIG. 2

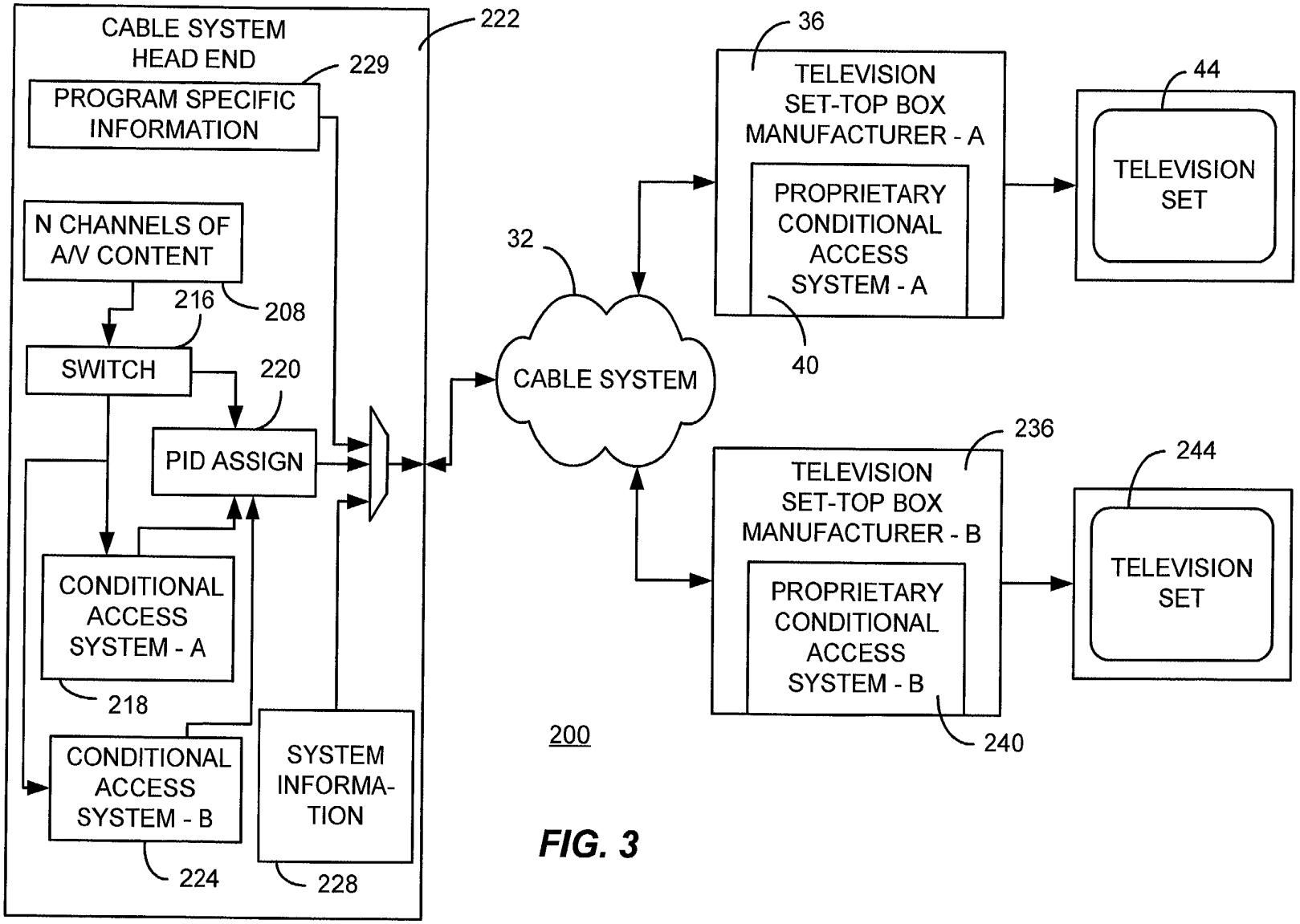


FIG. 3

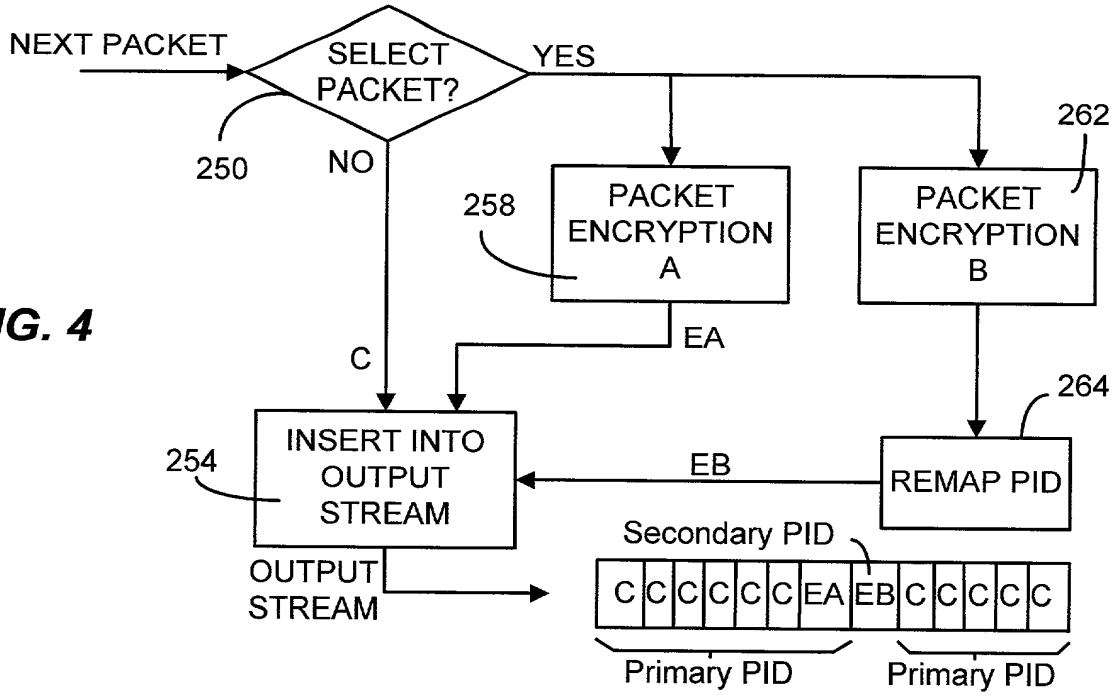

NEXT PACKET
SELECT PACKET?
YES
NO
250
262
258
PACKET ENCRYPTION A
PACKET ENCRYPTION B
EA
C
264
INSERT INTO OUTPUT STREAM
254
EB
REMAP PID
Secondary PID
OUTPUT STREAM
C C C C C C EA EB C C C C C
Primary PID
Primary PID

FIG. 4

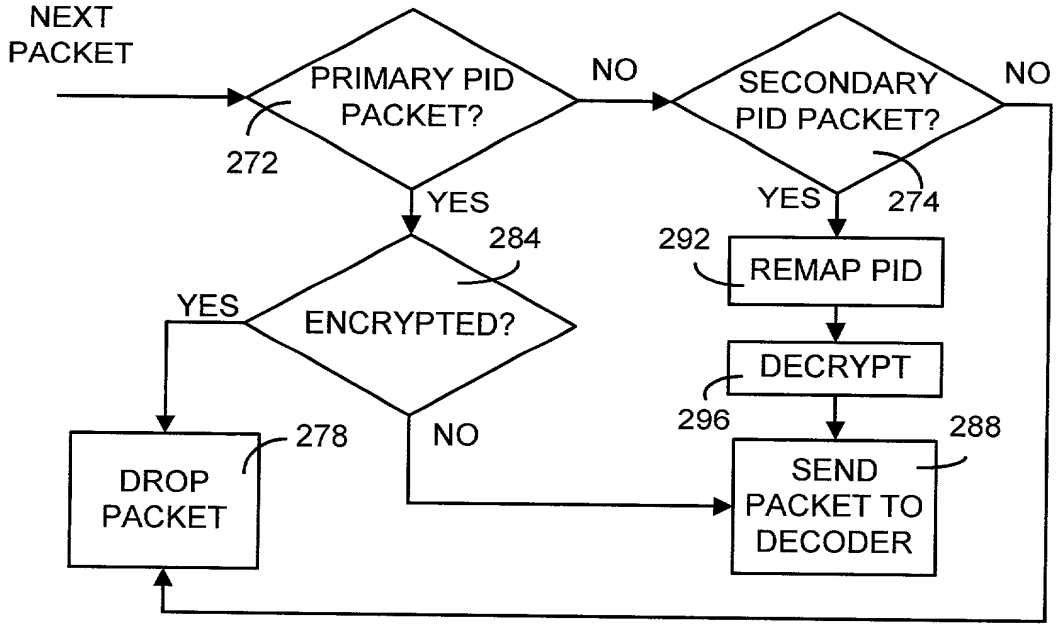

NEXT PACKET
PRIMARY PID PACKET?
NO
SECONDARY PID PACKET?
NO
272
YES
YES
274
284
292
REMAP PID
YES
ENCRYPTED?
DECRYPT
296
288
278
NO
DROP PACKET
SEND PACKET TO DECODER

FIG. 5

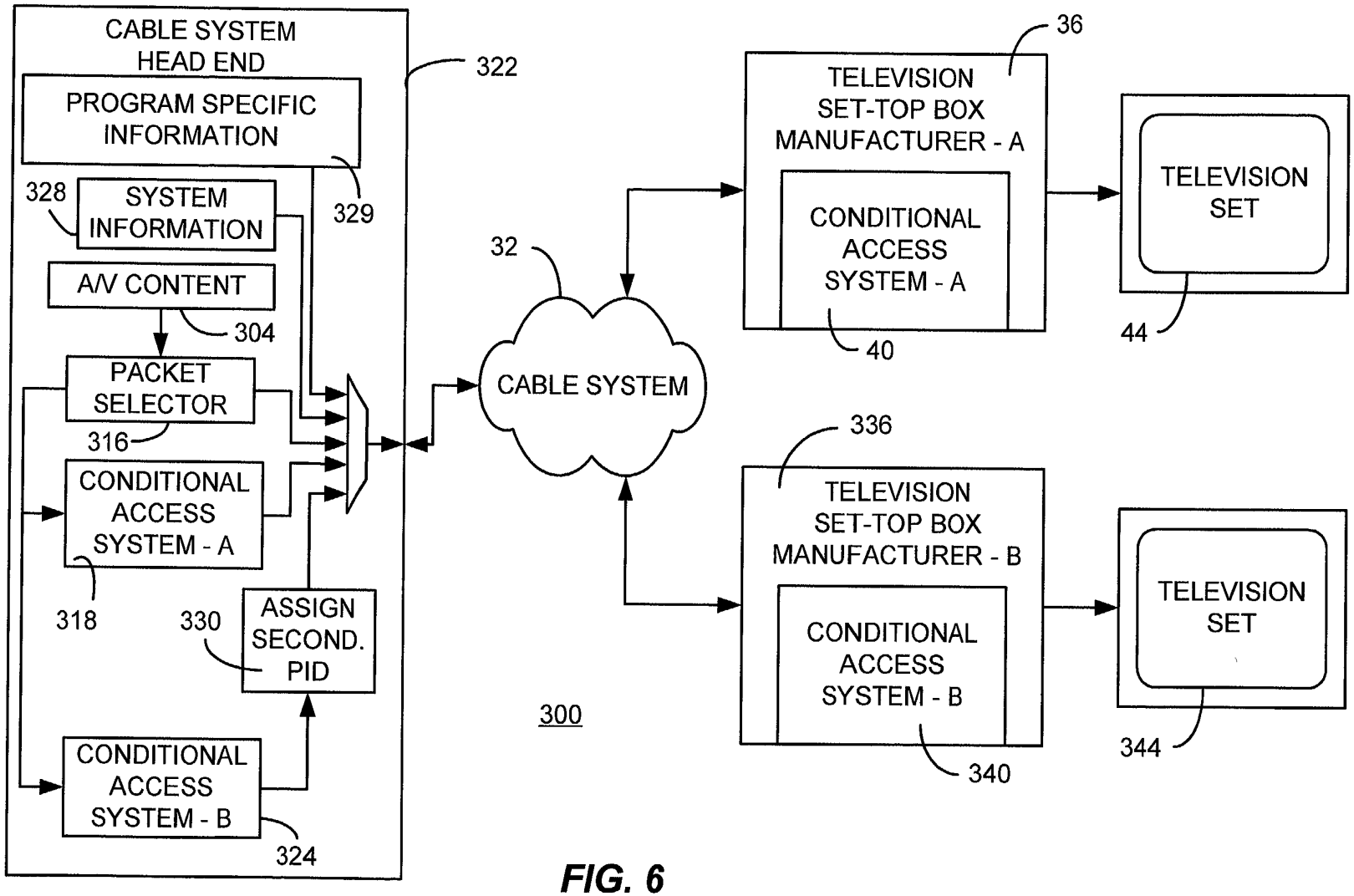

CABLE SYSTEM HEAD END
322
PROGRAM SPECIFIC INFORMATION
329
328
SYSTEM INFORMATION
A/V CONTENT
304
PACKET SELECTOR
316
CONDITIONAL ACCESS SYSTEM - A
318
330
ASSIGN SECOND. PID
CONDITIONAL ACCESS SYSTEM - B
324
32
CABLE SYSTEM
36
TELEVISION SET-TOP BOX MANUFACTURER - A
CONDITIONAL ACCESS SYSTEM - A
40
TELEVISION SET
44
336
TELEVISION SET-TOP BOX MANUFACTURER - B
CONDITIONAL ACCESS SYSTEM - B
340
TELEVISION SET
344
300

FIG. 6

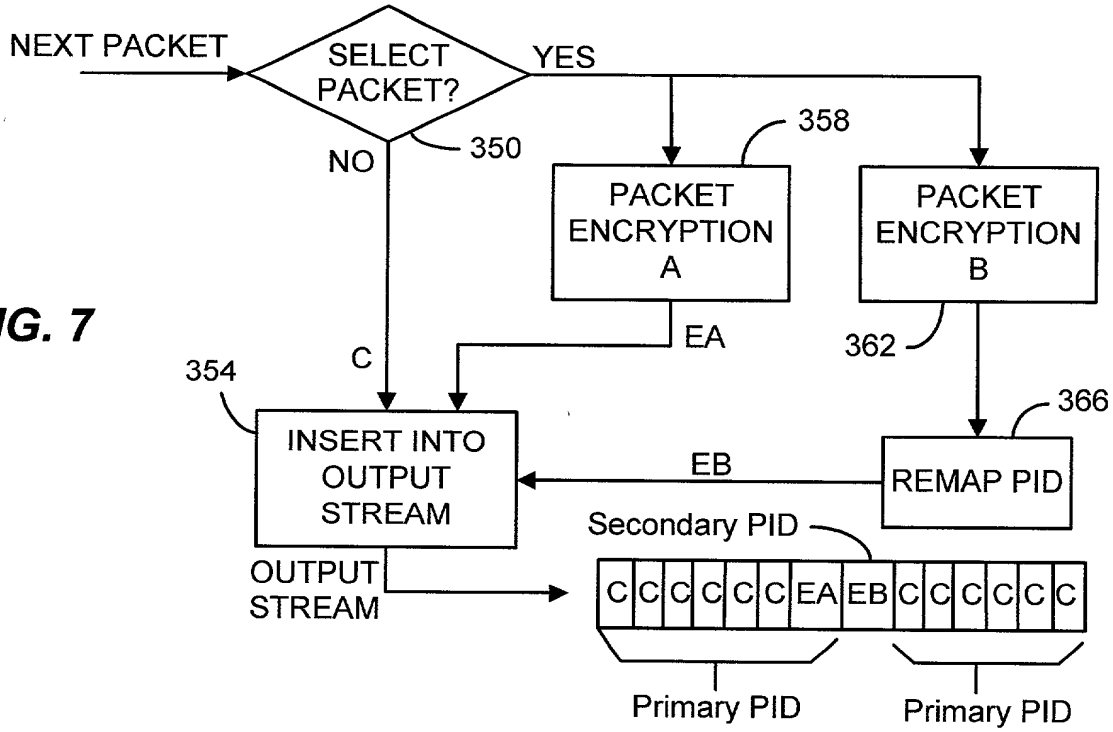

NEXT PACKET
SELECT PACKET?
YES
NO
350
358
PACKET ENCRYPTION A
PACKET ENCRYPTION B
EA
362
C
354
366
INSERT INTO OUTPUT STREAM
EB
REMAP PID
Secondary PID
OUTPUT STREAM
C C C C C C EA EB C C C C C C C
Primary PID
Primary PID

FIG. 7

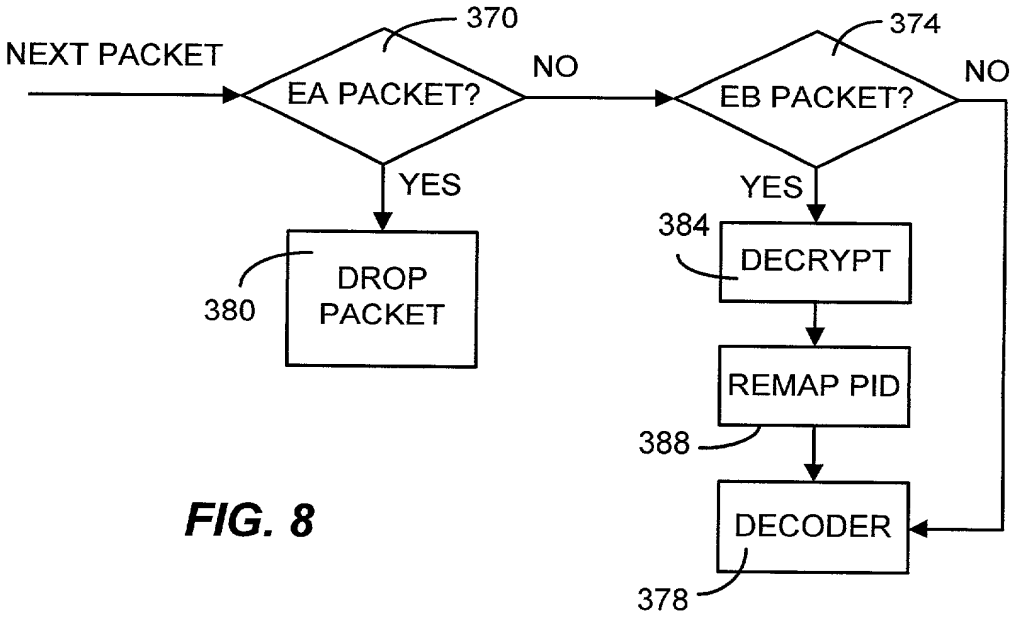

NEXT PACKET
370
EA PACKET?
NO
374
EB PACKET?
NO
YES
YES
384
DECRYPT
380
DROP PACKET
REMAP PID
388
DECODER
378

FIG. 8

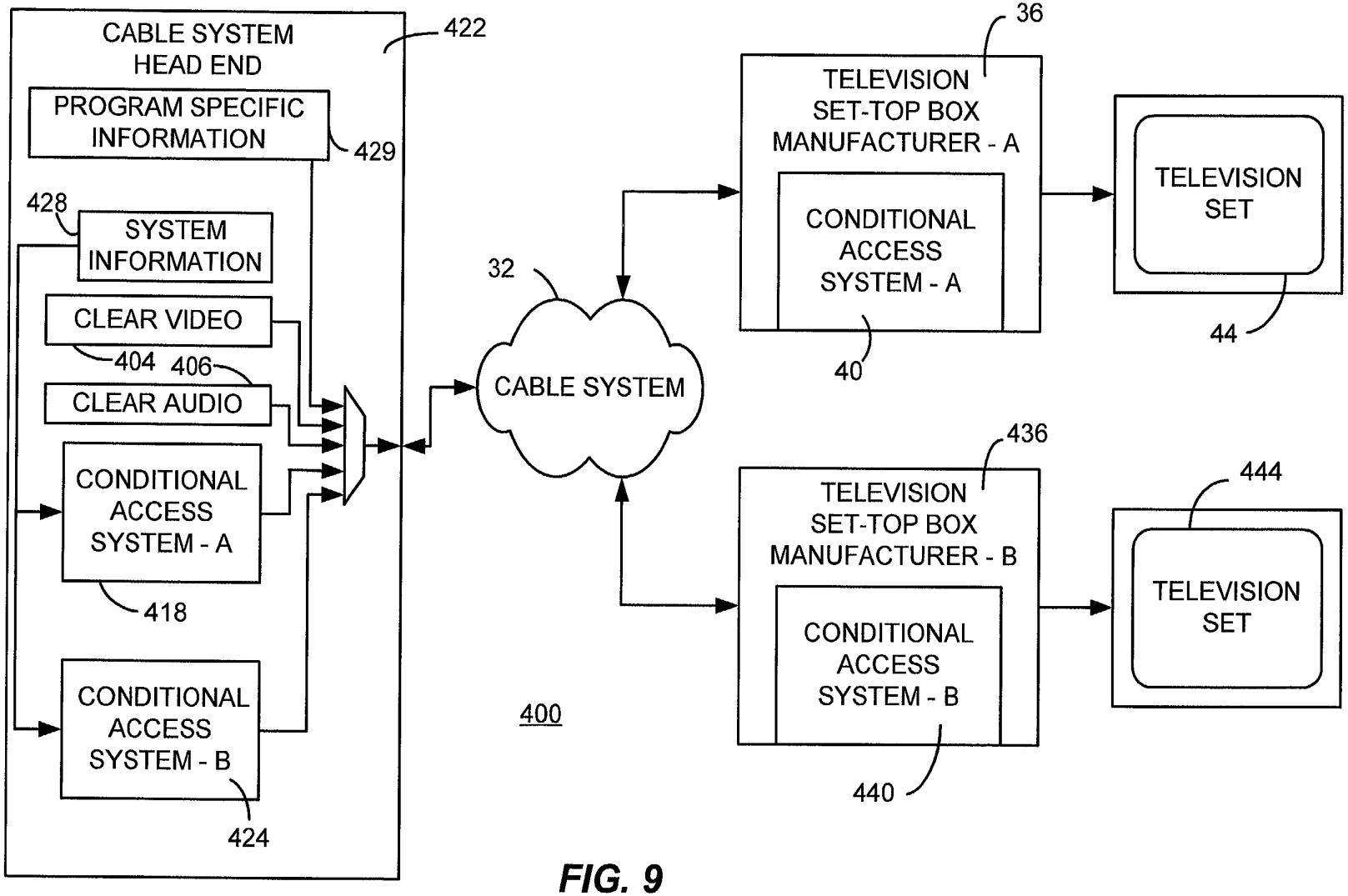

CABLE SYSTEM HEAD END
422
PROGRAM SPECIFIC INFORMATION
429
428
SYSTEM INFORMATION
CLEAR VIDEO
404
406
CLEAR AUDIO
CONDITIONAL ACCESS SYSTEM - A
418
CONDITIONAL ACCESS SYSTEM - B
424
32
CABLE SYSTEM
400
36
TELEVISION SET-TOP BOX MANUFACTURER - A
CONDITIONAL ACCESS SYSTEM - A
40
TELEVISION SET
44
436
TELEVISION SET-TOP BOX MANUFACTURER - B
CONDITIONAL ACCESS SYSTEM - B
440
444
TELEVISION SET

FIG. 9

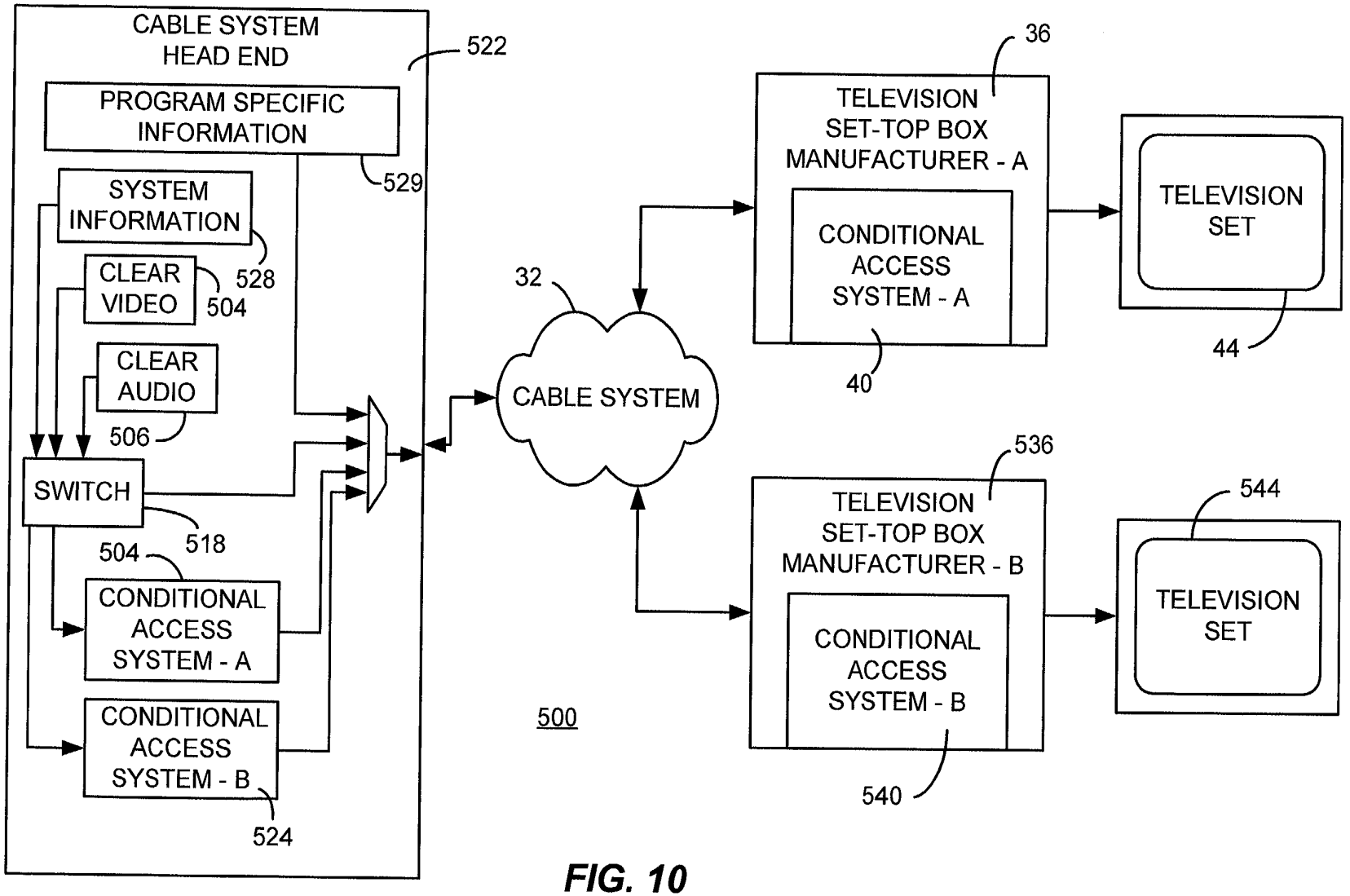

CABLE SYSTEM HEAD END
522
PROGRAM SPECIFIC INFORMATION
529
SYSTEM INFORMATION
528
CLEAR VIDEO
504
CLEAR AUDIO
506
SWITCH
518
504
CONDITIONAL ACCESS SYSTEM - A
CONDITIONAL ACCESS SYSTEM - B
524
32
CABLE SYSTEM
500
36
TELEVISION SET-TOP BOX MANUFACTURER - A
CONDITIONAL ACCESS SYSTEM - A
40
TELEVISION SET
44
536
TELEVISION SET-TOP BOX MANUFACTURER - B
CONDITIONAL ACCESS SYSTEM - B
540
544
TELEVISION SET

FIG. 10

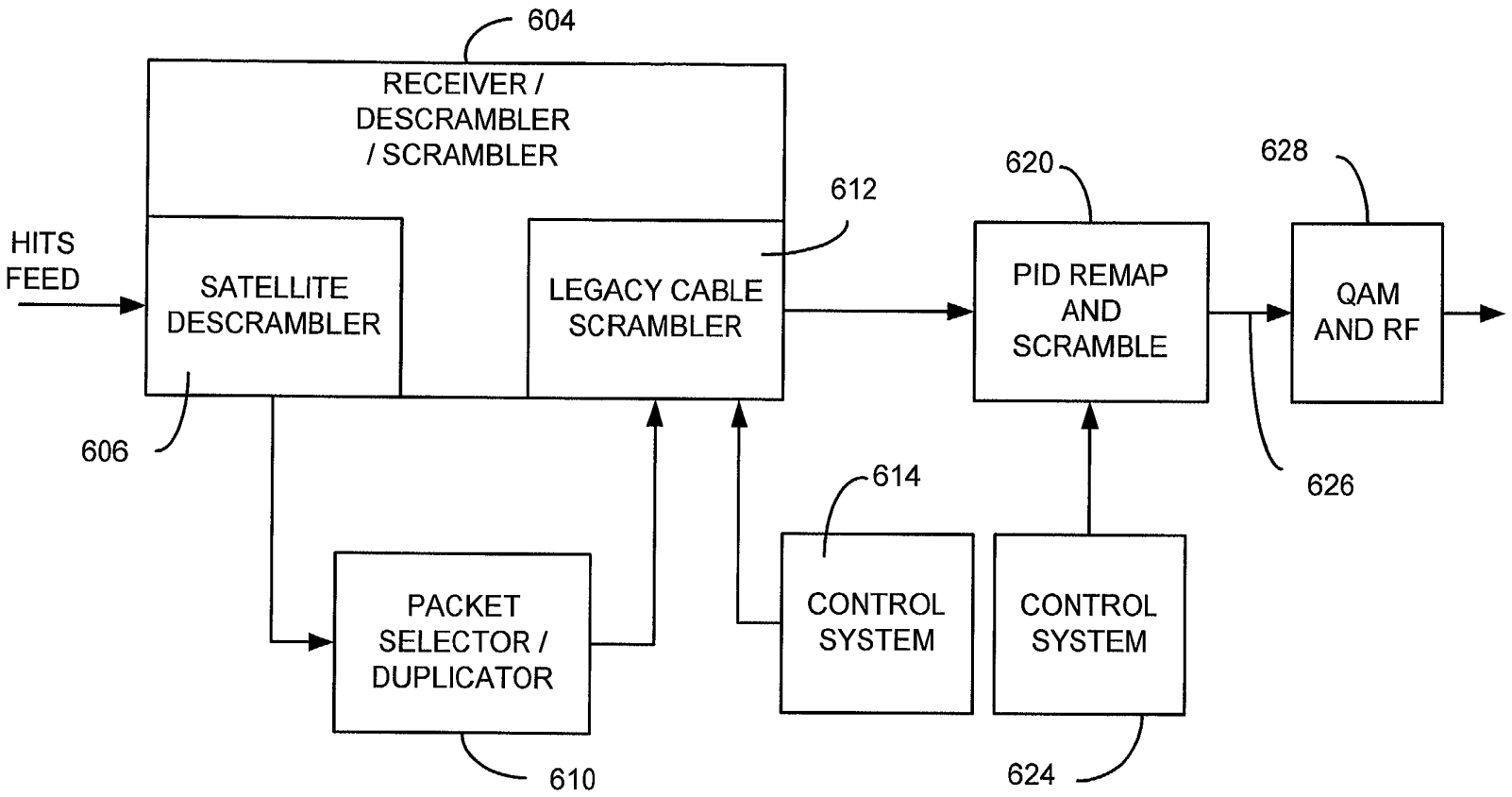

604
RECEIVER / DESCRAMBLER / SCRAMBLER
HITS FEED
SATELLITE DESCRAMBLER
606
LEGACY CABLE SCRAMBLER
612
620
PID REMAP AND SCRAMBLE
628
QAM AND RF
626
614
CONTROL SYSTEM
CONTROL SYSTEM
624
PACKET SELECTOR / DUPLICATOR
610

FIG. 11

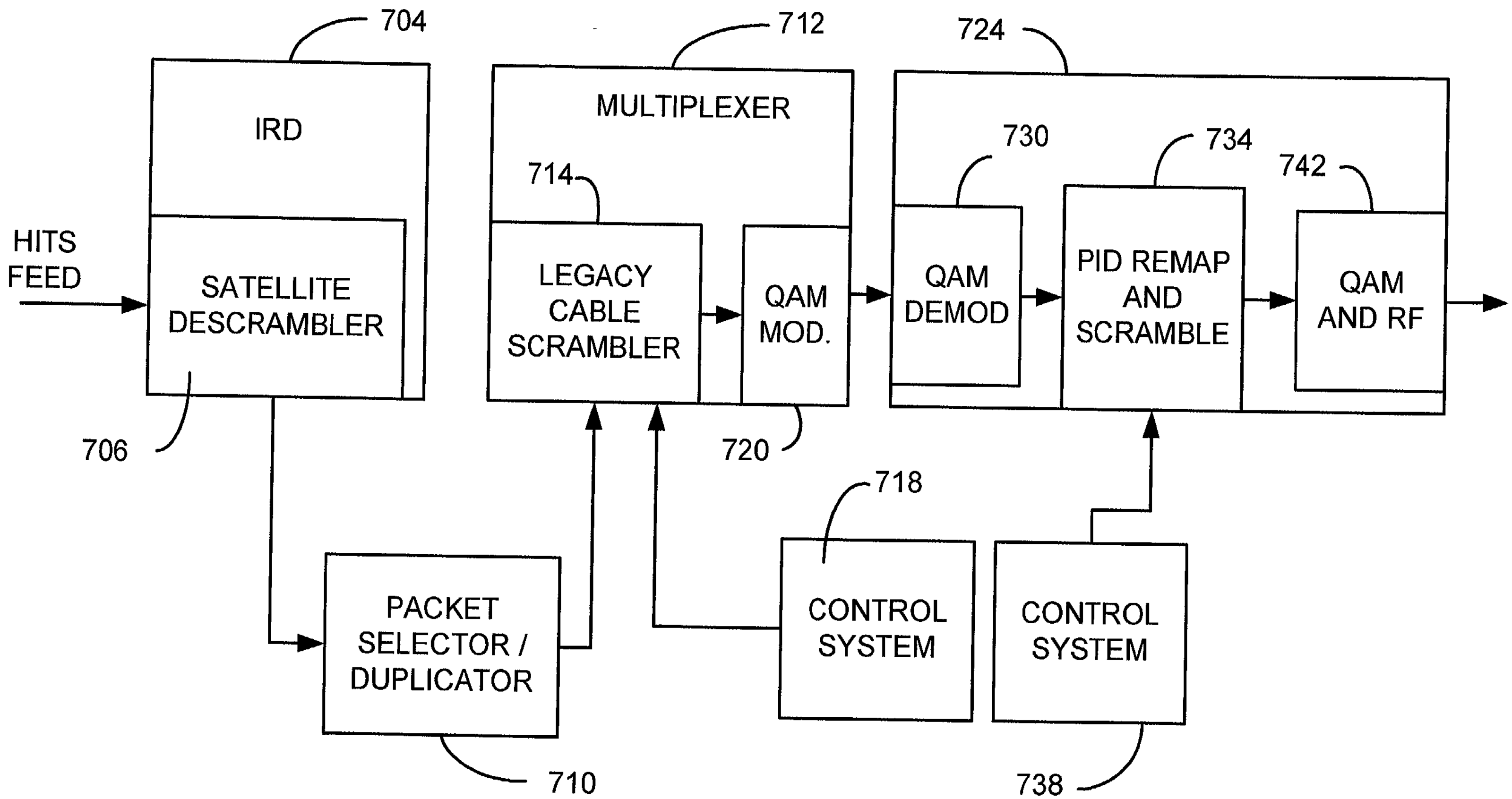
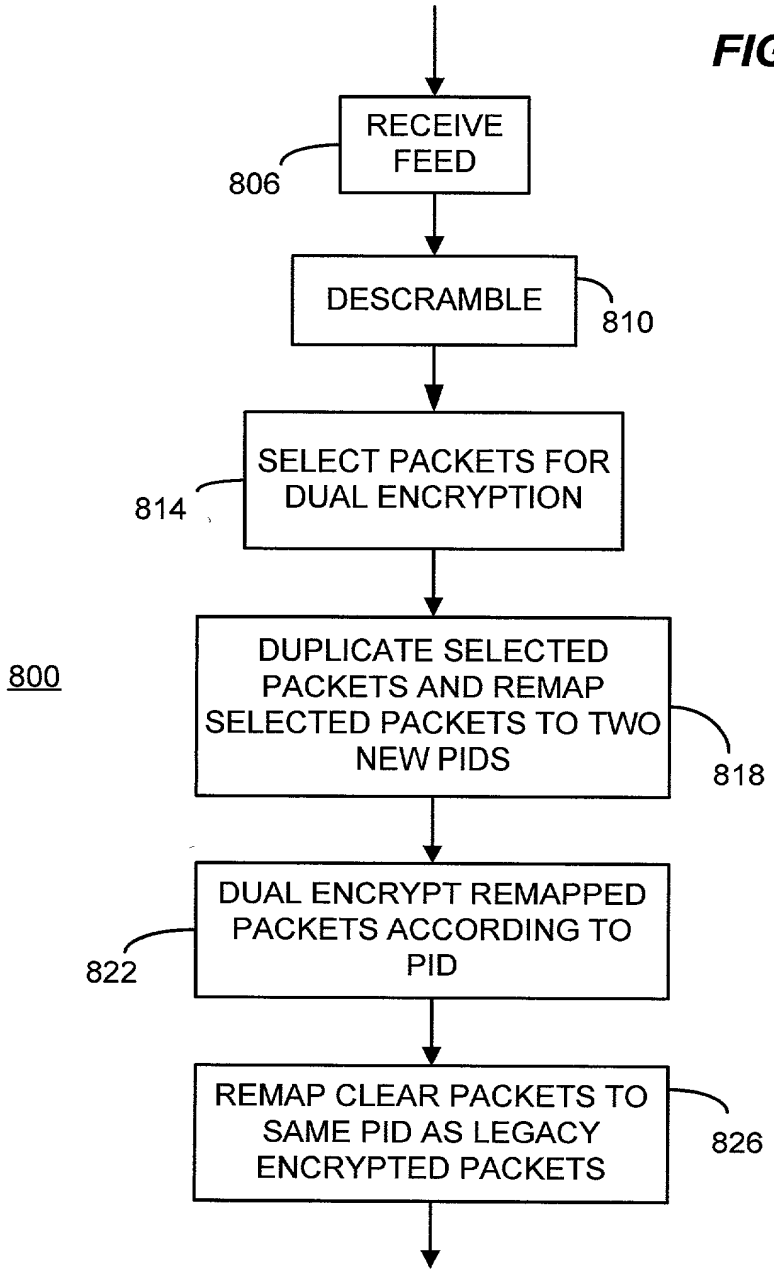

704
IRD
HITS FEED
SATELLITE DESCRAMBLER
706
712
MULTIPLEXER
714
LEGACY CABLE SCRAMBLER
QAM MOD.
720
724
730
QAM DEMOD
734
PID REMAP AND SCRAMBLE
742
QAM AND RF
PACKET SELECTOR / DUPLICATOR
710
718
CONTROL SYSTEM
CONTROL SYSTEM
738

FIG. 12

FIG. 13


RECEIVE FEED
806
DESCRAMBLE
810
SELECT PACKETS FOR DUAL ENCRYPTION
814
800
DUPLICATE SELECTED PACKETS AND REMAP SELECTED PACKETS TO TWO NEW PIDS
818
DUAL ENCRYPT REMAPPED PACKETS ACCORDING TO PID
822
REMAP CLEAR PACKETS TO SAME PID AS LEGACY ENCRYPTED PACKETS
826

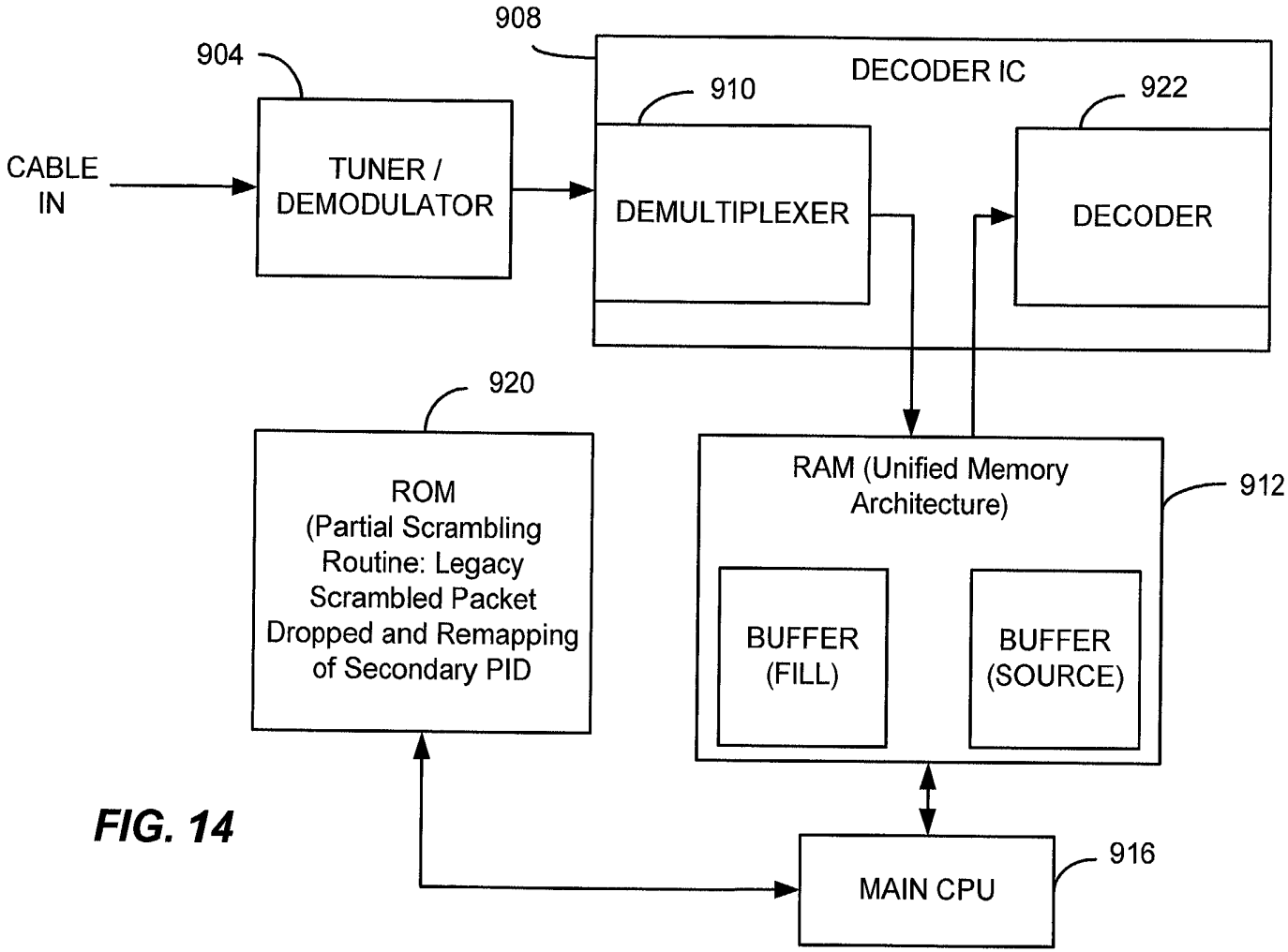

908
904
DECODER IC
910
922
CABLE IN
TUNER / DEMODULATOR
DEMULTIPLEXER
DECODER
920
ROM (Partial Scrambling Routine: Legacy Scrambled Packet Dropped and Remapping of Secondary PID
RAM (Unified Memory Architecture)
912
BUFFER (FILL)
BUFFER (SOURCE)
916
MAIN CPU

FIG. 14

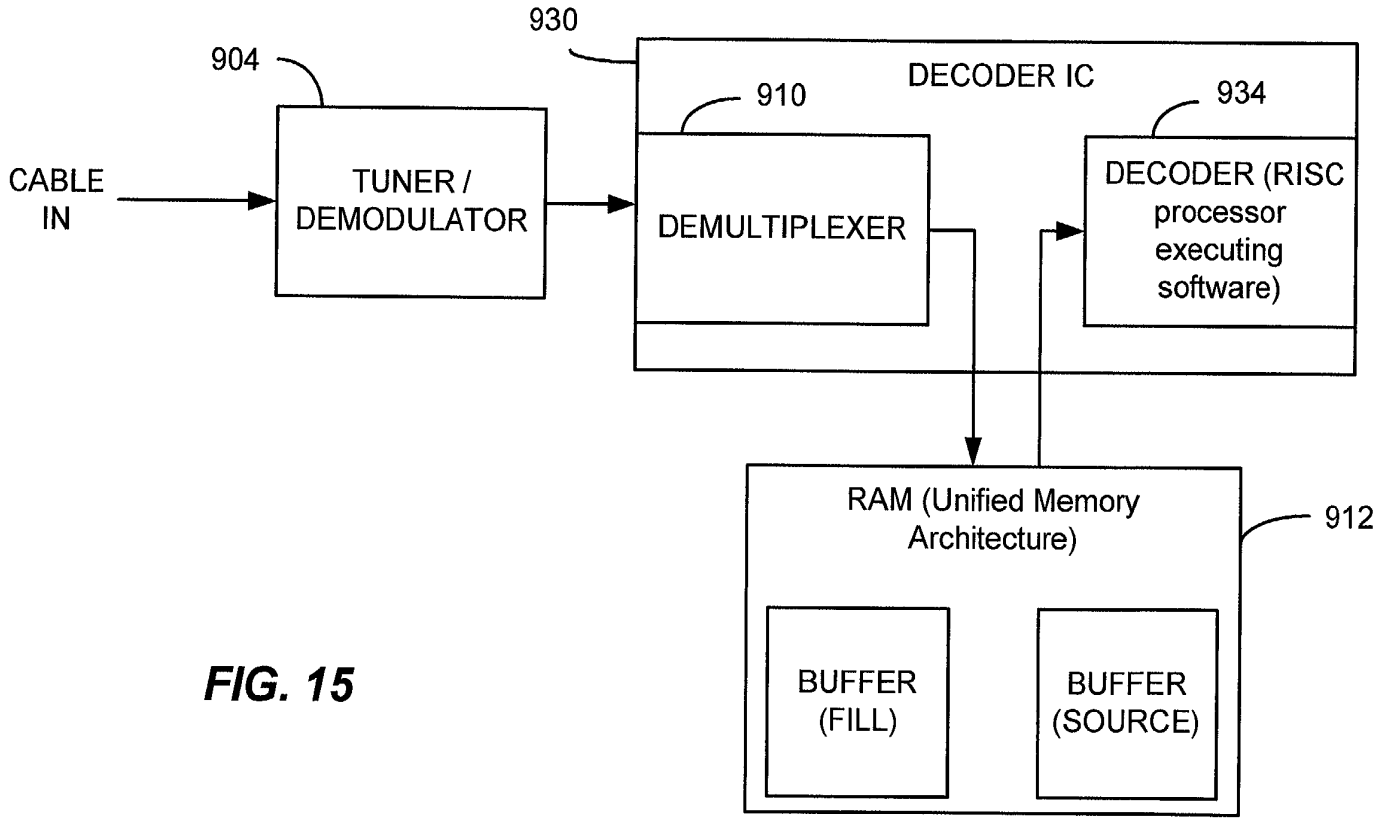

930
904
DECODER IC
910
934
CABLE IN
TUNER / DEMODULATOR
DEMULTIPLEXER
DECODER (RISC processor executing software)
RAM (Unified Memory Architecture)
912
BUFFER (FILL)
BUFFER (SOURCE)

FIG. 15

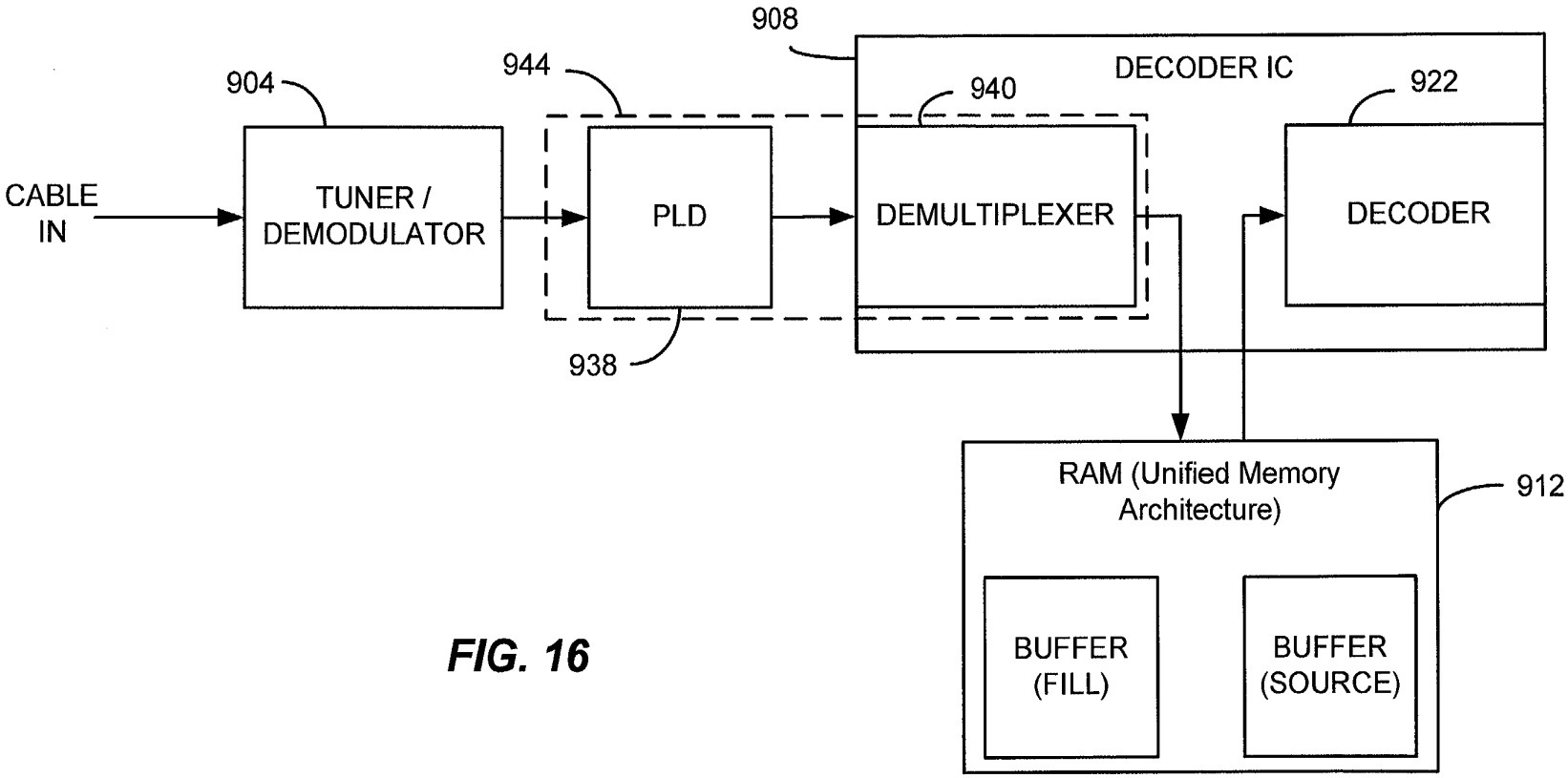

908
DECODER IC
904
944
940
922
CABLE IN
TUNER / DEMODULATOR
PLD
DEMULTIPLEXER
DECODER
938
RAM (Unified Memory Architecture)
912
BUFFER (FILL)
BUFFER (SOURCE)

FIG. 16

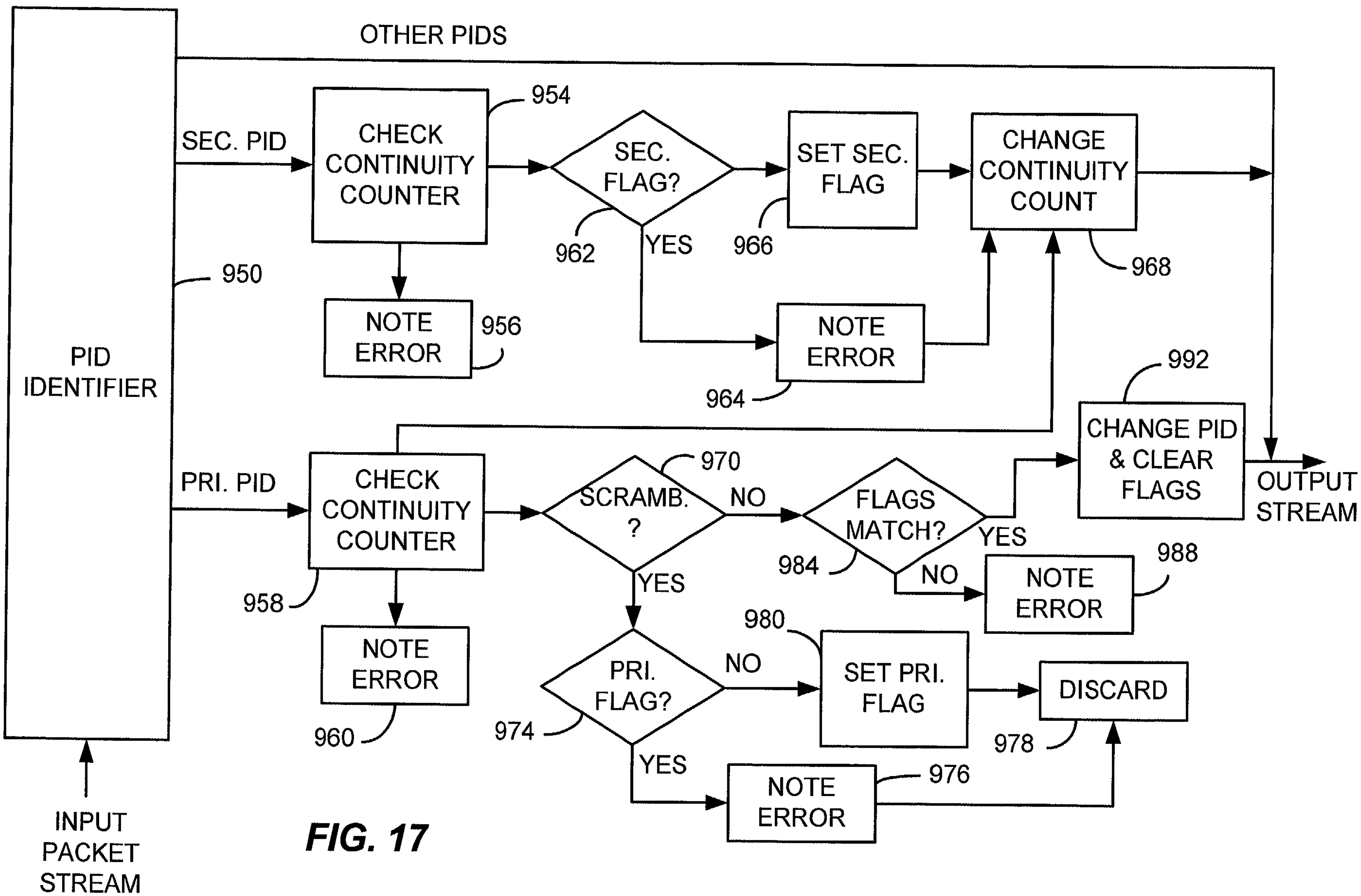

PID IDENTIFIER
INPUT PACKET STREAM
950
OTHER PIDS
SEC. PID
PRI. PID
CHECK CONTINUITY COUNTER
954
NOTE ERROR
956
SEC. FLAG?
962
YES
SET SEC. FLAG
966
NOTE ERROR
964
CHANGE CONTINUITY COUNT
968
CHECK CONTINUITY COUNTER
958
NOTE ERROR
960
SCRAMB. ?
970
NO
YES
FLAGS MATCH?
984
YES
NO
NOTE ERROR
988
CHANGE PID & CLEAR FLAGS
992
OUTPUT STREAM
PRI. FLAG?
974
NO
YES
SET PRI. FLAG
980
DISCARD
978
NOTE ERROR
976

FIG. 17

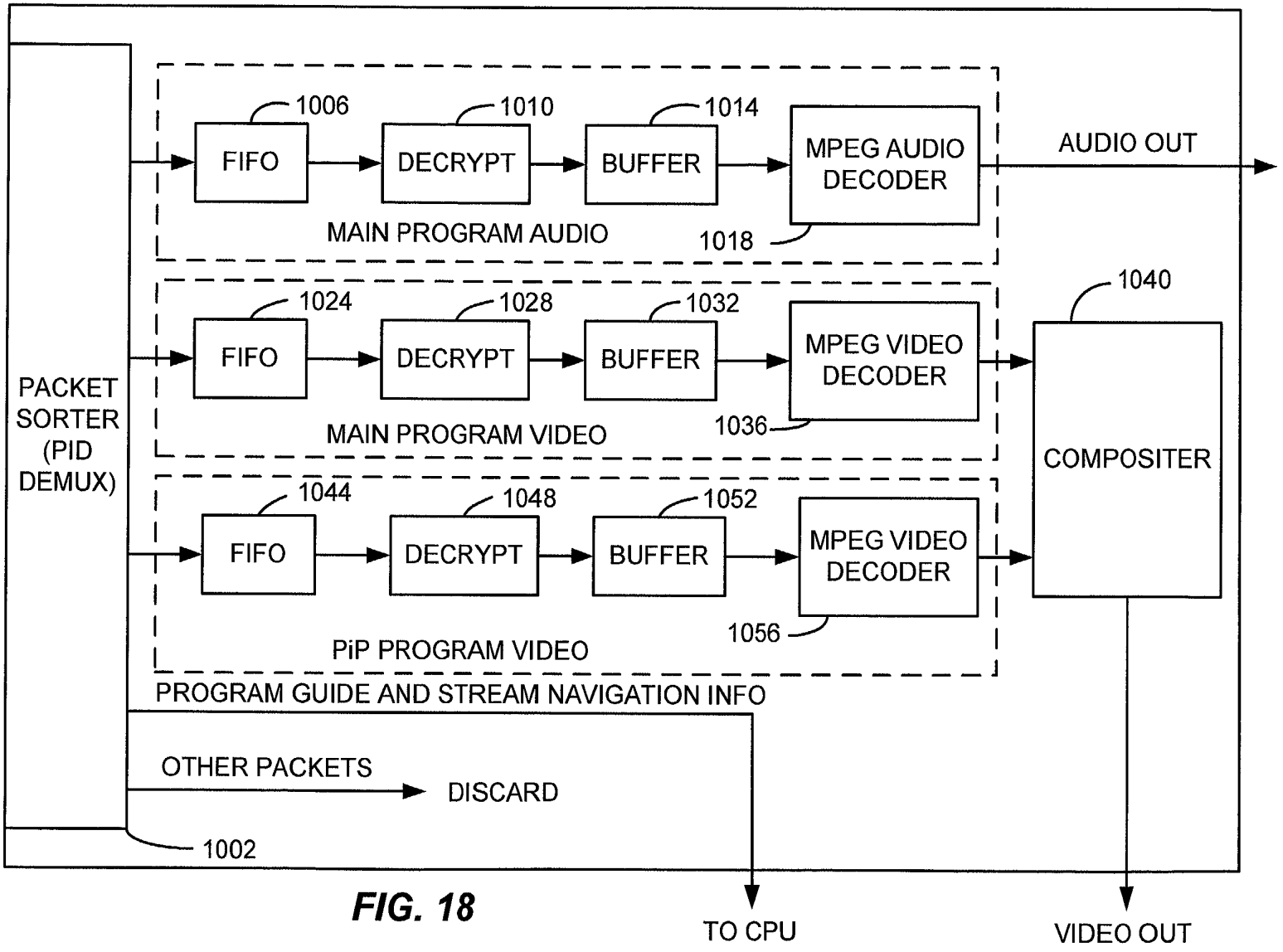

PACKET SORTER (PID DEMUX)
1006
FIFO
1010
DECRYPT
1014
BUFFER
MPEG AUDIO DECODER
AUDIO OUT
MAIN PROGRAM AUDIO
1018
1024
FIFO
1028
DECRYPT
1032
BUFFER
MPEG VIDEO DECODER
1040
COMPOSITER
MAIN PROGRAM VIDEO
1036
1044
FIFO
1048
DECRYPT
1052
BUFFER
MPEG VIDEO DECODER
1056
PiP PROGRAM VIDEO
PROGRAM GUIDE AND STREAM NAVIGATION INFO
OTHER PACKETS
DISCARD
1002
TO CPU
VIDEO OUT

FIG. 18